

- Hawkins, A. F. A. & Goodman, S. M. 1999. Bird community variation with elevation and habitat in parcels 1 and 2 of the Réserve Naturelle Intégrale d'Andohalela, Madagascar. *Fieldiana Zool., N. Ser.* 94: 175–186.
- Jönsson, K. A., Fabre, P.-H., Fritz, S. A., Etienne, R. S., Ricklefs, R., Jørgensen, T. B., Fjeldså, J., Rahbek, C., Ericson, P. G. P., Woog, F., Pasquet, E. & Irestedt, M. 2012. Ecological and evolutionary determinants for the adaptive radiation of the Madagascan vangas. *Proc. Natl. Acad. Sci. USA* 109: 6620–6625.
- Kerr, K. C. R., Stoeckle, M. Y., Dove, C. J., Weight, L. A., Francis, C. M. & Hebert, P. D. N. 2007. Comprehensive DNA barcode coverage of North American birds. *Mol. Ecol. Notes* 7: 535–543.
- Langrand, O. 1990. *Guide to the birds of Madagascar*. Yale Univ. Press, New Haven, CT & London.
- Morris, P. & Hawkins, F. 1998. *Birds of Madagascar: a photographic guide*. Pica Press, Robertsbridge.
- Peters, D. S. 1996. *Hypositta perdita* n. sp., eine neue Vogelart aus Madagaskar (Aves: Passeriformes: Vangidae). *Senck. Biol.* 76: 7–14.
- Sharpe, R. B. 1883. *Catalogue of the Passeriformes or perching birds in the collection of the British Museum*, vol. 7. Trustees of the Brit. Mus., London.
- Yamagishi, S. & Nakamura, M. 2009. Family Vangidae (vangas). Pp. 142–170 in del Hoyo, J., Elliott, A. & Christie, D. A. (eds.) *Handbook of the birds of the world*, vol. 14. Lynx Edicions, Barcelona.
- Addresses:* Jon Fjeldså & Knud A. Jönsson, Center for Macroecology, Evolution and Climate at The Natural History Museum of Denmark, Zoological Museum, Universitetsparken 15, DK-2100 Copenhagen, Denmark. Gerald Mayr, Forschungsinstitut Senckenberg, Sektion Ornithologie, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany. Martin Irestedt, Molecular Systematics Laboratory, Swedish Museum of Natural History, S-10405 Stockholm, Sweden.

Notice of location of holotypes of two Miocene fossil birds

H. Gregory McDonald & Fred MacVaugh

Received 20 November 2012

Wetmore (1943) described two new species of Miocene Accipitridae, a new species of *Neophrontops*, *N. vetustus*, and a new genus and species, *Palaeastur atavus*, based on specimens provided by Harold J. Cook, from Cook's personal collection, indicated by the prefix HC. Wetmore noted that the *Neophrontops* specimen, HC691, a distal end of a right humerus, was said to have been collected from 'Stonehouse Draw Quarry', Sioux County, Nebraska, USA. The specimen was collected by Cook in March 1938, at which time the only major quarry in Stonehouse Draw was Thomson Quarry (as figured in Skinner *et al.* 1977: Fig. 2). Other quarries in Stonehouse Draw include the North Thomson Quarry (a direct extension of Thomson Quarry) and Target Quarry at the head of the draw, which was discovered in 1947 and so cannot be the source of Wetmore's specimen. Likewise, Buck Quarry in East Stonehouse Draw was not discovered until 1941 so it too cannot be the site of collection. Thomson Quarry is in the middle Sheep Creek Formation (Skinner *et al.* 1977), which dates to the late Hemingfordian North American Land Mammal Age, *c.*16.5 Ma. The best age estimate for HC691 is 16.4 ± 0.07 Ma (Tedford *et al.* 2004: 220) based on an orthoclase from the Sheep Creek #3 Ash, the most reliably dated of the four Sheep Creek ashes. Thomson Quarry is not far below this ash, so the fauna is slightly older than the 16.4 Ma date.

The specimen of *Palaeastur*, HC693, a distal end of a right tarsometatarsus, was collected at the *Stenomylus* Quarry (also known as the Amherst Quarry), Sioux County, Nebraska. The *Stenomylus* Quarry is in the Harrison Formation, which dates to the late Arikarean North American Land Mammal Age, *c.*23 Ma. The age of the quarry is based on a 22.9 Ma date for the Agate Ash from the argon⁴⁰/argon³⁹ in sanidine (Izett & Obradovich 2001). *Stenomylus* Quarry is now part of Agate Fossil Beds National Monument, administered by the National Park Service.

Following publication of the descriptions, Wetmore returned the specimens to Cook. Harold Cook died on 29 September 1962, and his fossil collection was subsequently included as part of the estate donated to Agate Fossil Beds National Monument by his widow, Margaret, in 1968. Prior to the transfer, many of the holotypes in the Cook collection were transferred to the American Museum of Natural History (AMNH), New York. Brodkorb (1964) referred to both specimens by the Cook catalogue number given by Wetmore but erroneously reported that they were at AMNH. Recent reorganisation and curation of Cook's fossil collection at Agate Fossil Beds has resulted in the 'rediscovery' of the two holotypes. Both were illustrated as natural-size line drawings in multiple views in Wetmore's paper, and comparison of the specimens with the illustrations confirms their identity as holotypes of the two species. The Cook catalogue numbers referenced by Wetmore also are written on the respective specimens. Subsequent publications referring to these species have cited the Cook catalogue numbers in Wetmore's paper. As part of the Agate Fossil Beds Museum collection, they have been recatalogued. *Neophrontops vetustus*, HC691, is AGFO 18002, and *Palaeastur atavus*, HC693, is AGFO 18003.

Both species are still considered valid and have not been synonymised, e.g. by Brodkorb (1964) and Becker (1987). Chandler (1998) concurred with this determination for *Palaeastur atavus*. Any researcher interested in studying these specimens should contact the superintendent at Agate Fossil Beds to access the specimens.

Acknowledgements

We thank Robert Hunt, Jr., for sharing his knowledge of the geology and history of paleontological collecting in the areas where the two holotypes were collected and for his comments on early drafts of this paper. The submitted version benefitted from comments by David Steadman and Gerald Mayr.

References:

- Becker, J. J. 1987. *Neogene avian localities of North America*. Smithsonian Institution Press, Washington DC.
- Brodkorb, P. 1964. Catalogue of fossil birds; Part 2 (Anseriformes through Galliformes). *Bull. Fla. State Mus., Biol. Sci.* 8: 195–335.
- Chandler, R. M. 1998. Additions and comments on the fossil birds of Agate Fossil Beds National Monument, Sioux County, Nebraska. *Tech. Rep. NPS/GRD/GRDTR 98(1)*: 1–4.
- Izett, G. A. & Obradovich, J. D. 2001. ⁴⁰Ar/³⁹Ar ages of Miocene tuffs in basin-fill deposits (Santa Fe Group, New Mexico, and Troublesome Formation, Colorado) of the Rio Grande system. *Mountain Geologist* 38: 277–286.
- Skinner, M. S., Skinner, S. M. & Gooris, R. J. 1977. Stratigraphy and biostratigraphy of late Cenozoic deposits in central Sioux County, western Nebraska. *Bull. Amer. Mus. Nat. Hist.* 158: 263–370.
- Tedford, R. H., Albright, L. B., Barnosky, A. D., Ferrusquia-Villafranca, I., Hunt, R. M., Storer, J. E., Swisher, C. C., Voorhies, M. R., Webb, S. D. & Whistler, D. P. 2004. Faunal succession and biochronology of the Arikarean through Hemphillian interval (late Oligocene through early Pliocene epochs). Pp. 169–231 in Woodburne, M. O. (ed.) *Late Cretaceous and Cenozoic mammals of North America: biostratigraphy and geochronology*. Univ. of California Press, Berkeley.
- Wetmore, A. 1943. Two more fossil hawks from the Miocene of Nebraska. *Condor* 45: 229–231.
- Addresses:* H. Gregory McDonald, Museum Management Program, National Park Service, Fort Collins, Colorado 80525, USA, e-mail: Greg_McDonald@nps.gov. Fred MacVaugh, Agate Fossil Beds National Monument, 301 River Road, Harrison, Nebraska 69346, USA, e-mail: Fred_MacVaugh@nps.gov